

## **REMARKS**

Applicants also have amended Claims 2 and 7-9 for clarity herein and added new Claim 24. Enabling support for the amendments can be found in the application as filed (*See, e.g.*, original claims and page 1, paragraph 2). Therefore, no new matter is contained in the amendments. Reconsideration of the present application and allowance of pending Claims 2-17, 19, 21, and 23 are respectfully requested in view of the amendments and following remarks.

### **II. Rejections under 35 U.S.C. § 112, second paragraph**

Claims 7-11 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Specifically, the Examiner explained that "the phrase 'in particular' in claims 7-11 is confusing and unclear." Applicants have amended Claims 7-9, removing the modifying phrase "in particular" in relation to the word "product." Claims 10-11 do not contain the "in particular" claim language in relation to the word "product". As such, applicants respectfully submit that the currently pending claims particularly point out and distinctly claim the subject matter of the invention and request withdrawal of the rejection.

### **III. Rejections under 35 U.S.C. § 102**

Claims 2-5 were rejected under 35 U.S.C. § 102(b) as being anticipated by Hey *et al.* (EP 636704) for reasons set forth in the previous Office Action and in view of the arguments presented in the present Office Action. Applicants traverse the rejection as follows.

The Applicants would like to point out the difference between the subject matter of the present invention and the teaching of Hey *et al.* is of a fundamental nature. By means of heating, Hey *et al.* prevents the separating off of salts, i.e., precipitation of salts, simultaneous to their formation. According to the present invention, however, precipitated ammonium salts are brought into the gas phase.

The Examiner argues that according to Hey *et al.* ammonium chloride does not condense on the apparatus if the conduits are heated, and so it would be reasonable to assume that the ammonium chloride is formed in-situ and inherently decomposes into its corresponding

molecules. The Examiner points out that this inherent decomposition would read on the broadest interpretation of the claims, which simply require that the ammonium salt be brought into the gas phase at a temperature greater than 150°C.

However, such a reaction step completely differs from the method according to the invention. According to the invention, it is intended and necessary that the ammonium salts formed are first separated off, i.e., precipitated, before they are brought into the gas phase. Every kind of thermal decomposition, in addition to inherent decomposition, is to be avoided during this first step of the production cycle; otherwise, the chemical process does not take place as intended.

Specifically, ammonium salt according to Hey *et al.* is not separated as a precipitate and brought into the gas phase as defined in present Claim 2. If formed at all, it is formed in the gas phase. Any inherency anticipation rejection requires that the claimed invention is a necessary and inevitable consequence of the prior art, albeit unrecognized at the time. In the present case, the bringing of ammonium salt into the gas phase at temperatures  $\geq 150^{\circ}\text{C}$  is merely speculative conjecture and not an inevitable consequence of Hey *et al.*

The process according to present Claim 2 is the second phase in a two-phase cyclic process. The first phase concerns the synthesis or production phase, whereas the second phase is the regeneration phase, the conditions of which are comprised by present Claim 2. The ammonium salts formed in the synthesis phase are then thermally decomposed during the regeneration phase and then discharged from the reaction volume (paragraph [0030]). According to the invention, this cyclic process consisting of two phases allows one to separate off undesired by-products and, moreover, to recirculate to the process valuable starting materials or intermediates present therein after the separation step. Unreacted starting materials thereby can be advantageously fed into the synthesis phase as a feed stream (*see e.g.*, page 3, paragraph [0037]). Hey *et al.* does not provide any such suggestion or hint thereon.

Hey *et al.* do not teach each and every feature of the claimed methods of the present invention. Therefore, the rejection under 35 U.S.C. § 102(b) should be withdrawn.

#### **IV. Rejections under 35 U.S.C. § 103**

Claims 2-17, 19, 21, and 23 were rejected under 35 U.S.C. § 103(a) as being obvious over Hey *et al.* (EP 636704). In particular, the Office Action asserted that Hey *et al.* teach that it was known prior to the filing date of the present application that ammonium salts formed as by-products could be removed in the gaseous form. The Office Action further alleged that the difference between Hey *et al.* and the present invention is that the claims in the present application are directed to removal of ammonium salts formed as by-products in processes that were not explicitly shown in Hey *et al.* Accordingly, the Office Action concluded that it would have been obvious to use the methods of Hey *et al.* in other processes to remove unwanted ammonium salt by-products. Applicants respectfully submit that the presently claimed invention is not obvious over Hey *et al.*

Applicants note that Claim 2 of the present application is directed to a process for preparing a product, in which an ammonium salt is formed as by-product, comprising bringing the ammonium salt formed as a by-product into the gas phase at a temperature of  $\geq 150^{\circ}\text{C}$ . Hey *et al.* teach the continuous heating of the inlets into the reaction chamber, in order to prevent any ammonium salt at all from being formed as a by-product in the reaction chamber or in the inlets into the reaction chamber. In Hey *et al.*'s procedure, HCl is removed by heat from the reaction system before any ammonium salt by-product is formed. Thus, this is not a case where a known technique is being used to improve other processes in the same way. Further, there is no teaching or suggestion by Hey *et al.* that a heating step would be possible or advantageous at some point after the ammonium salt by-products were allowed to be produced, as is the case in the present invention. Rather, Hey *et al.* simply teach methods to prevent the ammonium salt by-product from being formed at all.

In addition, as discussed in detail above, the processes of the presently claimed invention advantageously describe the transfer of solid by-products formed in the synthesis phase into the gas phase, allowing the separation of undesired by-products from the product. This transfer of solid by-products to the gas phase allows for the possibility of recirculating valuable starting materials or intermediates present back into the process, after separating off the desired product and the undesired by-products. Unreacted starting materials thereby can be fed into the synthesis

phase as a feed stream. Hey *et al.* do not teach or remotely suggest this advantage which can be achieved by the invention.

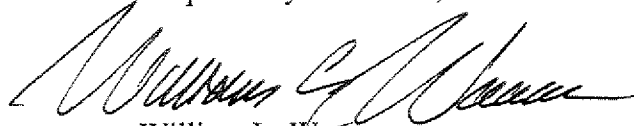
Hey *et al.* do not teach or suggest the presently claimed methods. Therefore, the rejection under 35 U.S.C. § 103(a) should be withdrawn.

### **CONCLUSION**

Applicants believe that the present application, as amended, is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The foregoing is submitted as a full and complete response to the Final Office Action mailed March 24, 2008.

No fees are believed due at this time. However, please charge any fees that may be due, or credit any overpayment, to Deposit Account 19-5029 (Ref. No.: 18744-0029). In addition, if there are any issues that can be resolved by a telephone conference or an Examiner's amendment, the Examiner is invited and encouraged to call the undersigned attorney at (404) 853-8000.

Respectfully submitted,



William L. Warren  
Reg. No. 36,714

SUTHERLAND ASBILL & BRENNAN LLP  
999 Peachtree Street, NE  
Atlanta, Georgia 30309-3996  
(404) 853-8000  
Our Docket: 18744-0029